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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/506,533 02/17/00 DECRISTOFARO

N 30-4519CIP10

EXAMINER

MMC2/1016

ATTN: PATEN SERVICES  
HONEYWELL INTERNATIONAL INC  
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TAMAI K	
ART UNIT	PAPER NUMBER

2834

DATE MAILED:

10/16/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

## Office Action Summary

Application No.

09/506,533

Applicant(s)

DECRISTOFARO ET AL.

Examiner

Tamai IE Karl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 8/16/01
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 37-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicant's election with traverse of 8/16/01 in Paper No. 7 is acknowledged. The traversal is on the grounds that there is no undue burden and the claims are best examined together. This is not found persuasive because the method of making limitations are not germane to the patentability of the apparatus and they include additional searches in class 29. The requirement is still deemed proper and is therefore made FINAL. Claims 37-50 are withdrawn from consideration.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the stator with upper and lower surfaces having lines normal to the axis of rotation in a segment with and without an air gap must be shown or the features canceled from the claims. No new matter should be entered.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:  

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claim 1-36 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was

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filed, had possession of the claimed invention. The specification does not have a full, clear, and concise written description of the stator with upper and lower surfaces having lines normal to the axis of rotation at any point in a segment with and without an air gap.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 36 is vague and indefinite because it is unclear whether the line is normal to the upper and lower surfaces at any chosen point or at every chosen point on the stator. To further prosecution on the merits the examiner will assume the claim is at any chose point on the stator segment.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 36 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Mishler et al.(4255684). The amorphous stator that has lines normal to the axis of rotation an any points from the upper and lower surfaces along the backiron portion of the core.

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***Claim Rejections - 35 USC 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 2, 3, 8, 19-22, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent 28 05 438('438) and Mischler et al.(Mischler) (4255684). '438 teaches a stator for a motor having a plurality of segments(one pole section and one backiron section) where the flux must cross an air gap between free ends of a tooth section 3 and a back iron section 2. Each of the back iron sections having a top and bottom surface which has a line normal to the surface being perpendicular to the axis of rotation of the rotor. '438 teaches an stator core secured by being pressed into a housing or belted together(outer restraining member) and having self adhesive foil spacers(inner member). '438 teaches the tooth sections 3 being generally straight and the backiron sections 2 being generally bent. '438 does not teach the stator metal being an amorphous metal. Mischler teaches a stator for a motor with a plurality of segments formed from amorphous metal. Mischler teaches a rotor 22 supported within the stator. It is inherent that motor includes a means to support the rotor. It would have been obvious to a person skilled in the art at the time of the invention to construct the stator of '438 with the metal being an amorphous metal

because Mischler teaches that amorphous metal is inexpensive to produce and has low magnetic losses.

Regarding claims 19-21, the heat treatment, application of a magnetic field, and annealing are method of making limitation that is not germane to the patentability of the apparatus.

11. Claims 4, 5, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over '438 and Mischler, in further view of Thomas(US 2556013). '438 teaches the wedges 7 having a self adhesive to bond the teeth sections 3 and the back iron sections 2, where the adhesive does not include the first free end 5. The self adhesive inherently covering a substantial portion of the stator, such that the adhesive bonds to both the tooth and the backiron sections. '438 and Mischler teach every aspect of the invention except, a steel band peripherally around the stator. Thomas teaches a steel band 2 to secure a laminated stator core 3. It would have been obvious to a person skilled in the art at the time of the invention to construct the stator of '438 and Mischler with the steel band of Thomas because steel has a good tensile strength and because '438 teaches the stator core is secured in a frame.

12. Claims 6, 7, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over '438, Mischler, and Thomas, in further view of Laing(US 3591819). '438, Mischler, and Thomas teach every aspect of the invention except the bonding material being an epoxy resin and the inner restraining member being a bonding

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material and a metal band. Laing teaches a laminated stator having a plurality of sections, where the sections are held together by an synthetic resin and a rivet. The examiner takes official notice that an epoxy resin is well known synthetic resin in the motor art. It is inherent that the rivet is metal. It would have been obvious to a person skilled in the art at the time of the invention to construct the stator of '438, Mischler, and Thomas with the bonding material being an resin because Laing teaches that synthetic resins are a known binding material between stator lamination sections, with the resin being an epoxy resin because it is easily molded around the laminations, and with the rivet(banding) securing the tooth laminations together because Laing teaches that both a rivet and resin are used to secure the laminations together.

13. Claim 9 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over '438 and Mischler, in further view of Frischmann(US 4197146). '438 and Mischler teach every aspect of the invention except the specific atomic composition of the amorphous metal. Frischmann teaches the amorphous metal can made up of ONE OR MORE OF THE FOLLOWING: Fe, Ni, or Co from 70-90% which can be replace by Mo, W, Cr, and V from 70-90%, and C, B,P from 10-30% which can be replaced by Al, Sn, Sb, Ge, In and Be from 10-30%(which includes Si, Al, and Ge between 5-20%). Frischmann teaches that the elements within the group are interchangeable and that more than one could be used, which includes Y+Z replaced by In, Sn, or Sb. Frischmann teaches an impurity of C being 0-2% which includes the range of 0-1%. It would have been obvious to a person skilled in the art at the time of the invention to

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construct the stator of '438 and Mischler with MYB composition with M replaced by up to 10% Mo, W, Cr, or V because Frischmann teaches that more than one M element may be used, with the (Y+Z) replaced by In, Sn, or Sb because Frischmann teaches that more than one Y and Z elements can be used, and because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

In regards to claim 34, the rejection includes the obviousness rejection of paragraph number.

14. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over '438, Mischler, and Frischmann, in further view of Datta et al.(Datta)(US 4,409,041). '438, Mischler, and Frischmann teach every aspect of the invention except the FeBSi formula. Datta teaches the FeBSi formula with the ranged and number claimed by the applicant. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of '438, Mischler, and Frischmann with the amorphous material as set forth in claims 10 and 11, because Datta suggests the disclosed range and because Datta suggests the disclosed range to enhance the magnetic properties.

15. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over '438, Mischler, and Frischmann, in further view of Vernin et al.(Vernin)(US 5922143). '438, Mischler, and Frischmann teach every aspect of the invention except nanocrystalline



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microstructure. Vernin teaches that a nanocrystalline structure is suitable for magnetic cores. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of '438, Mischler, and Frischmann with the heat treated nanocrystal microstructure because Vernin teaches the nanostructure is good for magnetic cores.

16. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over '438, Mischler, Frischmann, and Vernin, in further view of Yoshizawa et al. (Yoshizawa) (US 4881989). '438, Mischler, Frischmann, and Vernin teach every aspect of the invention except composition of claims 13 and 14. Yoshizawa teaches the composition with similar atomic ranges. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of '438, Mischler, Frischmann, and Vernin with the amorphous composition of claims 13 and 14 because Yoshizawa teaches the components combine to make an amorphous material with excellent magnetic qualities, and in the specific range because a person of ordinary skill in the art would attempt to optimize the atomic composition to provide the best magnetic material.

17. Claims 15-18, 26-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over '438 and Mischler. '438 and Mischler teach every aspect of the invention except the core loss and frequency range of the magnetic material. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the

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stator core of '438 and Mischer with the core loss with the formula of claim 15, at 1 for 60 Hz, 12 for 1000 Hz, or 70 at 20000 Hz to optimize the magnetic characteristics of the amorphous material.

Claims 28-30 are method of making limitations which are not germane to the patentability of the apparatus.

18. Claims 19-21 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over '438 and Mischler, in further view of Clark et al.(Clark)(US 4,763,030). '438 and Mischler teaches every aspect of the invention, except the heat treatment, application of a magnetic field, and annealing the segments. Clark teaches amorphous metal being a continuous cooled after annealed in a magnetic field. It would have been obvious to a person skilled in the art at the time of the invention to construct the stator of '438 and Mischler with the segments continuously annealed then cooled in a magnetic field, as in Clark, to improve the magnetomechanical coupling factors of the amorphous metal.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the

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examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703)308-1371. The facsimile number for the Group is (703)305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Karl I Tamai  
PRIMARY PATENT EXAMINER  
October 12, 2001

  
**KARL TAMAI  
PRIMARY EXAMINER**